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Dear Industry Colleagues

TESTING GUIDANCE FOR DEMAND SIDE RESPONSE PROVIDERS

On 19th July NGET published an updated guidance document for the testing of frequency response from DSR providers. This document was developed as a result of feedback from our stakeholder consultation with the intention of clarifying the existing testing requirements. Following publication NGET has received further feedback and questions. This letter aims to further clarify the existing requirements and set out our next steps for review and development of the testing process which are required given the entrance of new technology providers into the Firm Frequency Response market.

Summary of the Consultation

The testing guidance document was created to provide a tailored approach to pre-qualification for DSR and storage parties. Pre-qualification requirements for conventional generation are contained in the Grid Code and supporting documents. Feedback from industry noted that the document did not provide the necessary clarity on how DSR and storage assets could meet the testing criteria. NGET consulted industry from 19th December 2016 to 3rd February 2017 on how to improve the document, asking 9 questions on relevant subject areas. NGET received 12 responses to the consultation, all but one answering the questions set out. Feedback from the consultation was broadly grouped into two areas: clarifications on the existing methodology and questions where the methodology did not cover the behaviour of DSR assets.

Comments in the first area were addressed by redrafting the existing document, clarifying and updating the testing profiles/process to provide clarification and remove ambiguity in their interpretation. The detail and rationale for the changes that have been made are summarised in Appendix 1. All the changes made are in line with the Grid Code requirements for frequency response that apply to conventional generation.

Comments in the second area require input from teams across the System Operator due to their complexity. These topics are still being investigated through a dedicated internal working group, with the intention that as and when decisions are made these are communicated to the industry and incorporated into a new version of the testing guidance document. A list of these questions and working timetable is included in Appendix 2.

Future Product Development

We are simplifying our balancing services to ensure that they are appropriate for the future and minimise any barriers to participation as a result of technological differences between different providers. We consulted over the summer on what future products and markets should look like, and we will be producing a product roadmap during the autumn which will set out in more detail our proposals for new products under the service areas of frequency response, reserve, constraints, reactive power and black start. As part of that work, we are ensuring that feedback from providers is taken into consideration in the proposed design of these new products.

New technology types introduce new challenges and require new approaches. One focus area in the new product design is finding the appropriate balance between pre-qualification of new assets and ongoing performance monitoring. An option under consideration to reduce barriers for DSR is to relax

the requirements for pre-qualification but increase the frequency and thoroughness of ongoing performance monitoring. However this would change the balance of risk for the SO and we will need to understand the impact on security of supply if we moved to this approach.

We would also need to ensure that we are consistent in approaches taken across provider types and that any changes made are communicated in a transparent way to the industry. We would encourage parties to engage with the work on the review of balancing services through the available channels and their respective industry associations in order to feed their views on the future balance between performance monitoring and upfront testing and compliance.

Summary

We will continue to refine and revise the testing guidance document based on feedback from industry parties, particularly addressing the outstanding questions detailed in Appendix 2 in the next few months. We will communicate any changes through channels such as Power Responsive and via the DSR section of our Balancing Services website, ensuring appropriate feedback is reviewed before publishing future revisions.

Yours sincerely,

Rob Smith
Contracts and Settlements Manager

Appendix 1 – Changes made between Version 1 & 2 of the Guidance Document

The term contracted response refers to the Firm Frequency Response agreed in the FFR Capability Data Tables of the agreement.

Issue	Version 1	Version 2	Comments
Measurement sample rate	10Hz rate	10Hz rate (No change)	Required to ensure that delivery of response measured in seconds is delivered as required by the Grid Code. This is consistent with the requirements placed on large generation ensuring a level playing field to all parties. (Grid Code Connection Conditions 6.6.2)
Test 1 – Step Tests Dynamic Response	Previously there were 10 injections .+/- 0.01Hz and 0.02Hz to check the deadband. Then +/- 0.1, 0.2 and 0.5Hz.	4 additional frequency injection tests. +/-0.01Hz test removed.	4 additional tests have been included under Test 1 (1.7 - 1.10). The 4 tests review the unit's capability across all 5 deviation points that are contracted. Previously this data was linearly interpolated; the revised method assesses each deviation point to ensure contracted capacities can be met.
Test 1 – Step Tests Dynamic Response	No guidance with regards to tolerance on contracted response.	Allowable Power Tolerance introduced.	Up to a +/-5% tolerance has been applied to tests 1.3 – 1.12. Note this % tolerance changes as the deviation increases, as per table 3.2.
Power Spikes / Standard deviation of load error.	No guidance / tolerances.	Tolerance introduced.	Standards adjusted in line with the Grid code (cc.6.3.9) to a standard deviation of 2.5% of maximum contracted value. Provides a clear numerical pass/failure assessment on over delivery and oscillations during the power response. Unexpected over or under-delivery of active power to the system during a fault event, even for a very short time, increases the volatility of the frequency and could unnecessarily trigger additional mitigation measures such as static response and demand disconnection.
Test 2 – Frequency Sweep Tests	Same number of tests.	Revised frequency injection and tolerance added.	Frequency injections amended for tests 2.1 – 2.4. Tolerance has been added to clarify acceptability.

Appendix 2 – Outstanding Questions under Investigation

	Topic	Description	Comments
1	Baseline methodology	Baseline of power from which response is delivered. Also an area of interest from windfarms. Methodology to measure the underlying MW level in order to determine level of response provided.	NG is considering introducing a trial option for providers to sign up to a revised baselining methodology that is better suited to DSR. The outcome of this trial will feed into the FFR product development. NG plan to communicate further on this work stream towards the end of September.
2	Contracted Response	Granularity of steps allowed within a frequency contracted response profile, what is the maximum step size that would still constitute as being linear? Gradient of contracted response curve: what are the limits around the shape of the contracted response curve and what are the implications of moving away from a directly proportional response?	Frequency modelling will assess the implications of introducing a 5% tolerance to tests 1.3-1.12. (note this tolerance changes across the deviation points). This analysis will feed into the future development of the FFR product.
3	Power Spikes/Standard Deviation of Load Error	What are acceptable tolerances around power spikes?	Standards adjusted in line with the Grid code (cc.6.3.9) to a standard deviation of 2.5% of maximum contracted value during steady state period of tests. Demand providers will not be penalised for normal demand profiles. NG will review the introduction of such tolerances and consider any further changes as part of the FFR product review.
4	Statistical Testing	Sub sites are currently required to be tested at 0.1 second accuracy. Is there scope to move to statistical testing or other methods?	At this moment in time NG will not be allowing statistical testing. Due to the vast number of asset types participating, unless each individual element of DSR can be clearly grouped into categories the benefits of statistical testing could not be realised.
5	Frequency Measurement	Location of frequency measurement. Current requirement for measurement at a site level rather than regionally or centrally.	NG is currently investigating regional measurement implications and suitability of this approach.

6	Connection Requirements	Is a single or double circuit connection required for providing dynamic frequency response? Identify how and in what circumstances the impact of frequency response not being delivered at a critical time would cause a risk to the operation of the system and what the materiality of the risk would be.	Initial modelling has been undertaken on the system risk, further work will look at the probabilistic forecasting of DNO circuit outages based on historical information. Currently single circuit connections are acceptable; however this will be kept under review.
7	Policy	The need to ensure that Flexibility providers can deliver at times of system stress and that restrictions on the DNO do not prevent the use of their services, for example Active Network Management (AMN) schemes.	Review is underway to identify potential conflicts and consider best mitigating actions available. Ancillary services agreements exclusivity provisions currently prevent an embedded source of MW from having an Ancillary services contract with NG if the provider also has a contract with a DNO that includes ANM-type restrictions. ENA Open Networks Project is currently reviewing this topic.
8	State of Charge Management (SOC)	What are the allowable approaches to State of Charge Management for storage assets?	Currently state of charge management is not permitted in the dead band for the FFR service. The delivery of the EFR service will provide empirical data on the operation of significant levels of battery assets from March 2018. NG are considering the various options available for managing SOC and will look to publish further guidance in the Autumn. Updates will be communicated through the appropriate channels.
9	Stacking	How does the new document interact with existing units that have been tested when additional volume is added?	NG intends to publish further details by October 2017.